

# NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, DC 20594

March 23, 2020

## Onboard Image Recorder

### Specialist's Factual Report

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#### 1. EVENT

Location: Phoenix, Arizona  
Date: 08/20/2018  
Aircraft: Acroduster II, N787WM  
Operator: Private  
NTSB Number: WPR18FA229

#### 2. GROUP

A group was not convened.

#### 3. SUMMARY

On August 20, 2018, about 0645 mountain standard time, an Acroduster II experimental amateur-built airplane, N787WM, was substantially damaged following a loss of control and impact with terrain about 650 ft east-southeast of the southeast boundary of Deer Valley Airport (DVT), Phoenix, Arizona. Both the front and rear seat certified private pilots sustained fatal injuries. The airplane was registered to a private individual; however, it was reported that two days prior to the accident the rear seat pilot had purchased the airplane. The local flight was being operated under the provisions of Title 14 *Code of Federal Regulations* Part 91, and a flight plan was not filed. Visual meteorological conditions prevailed for the flight, which departed DVT about 0625.

#### 4. DETAILS OF INVESTIGATION

On December 14, 2018 the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following Onboard Image Recorder:

Recorder Manufacturer/Model: **iON Speed-Pro Video Camera**  
Recorder Serial Number: **H15000110250552519**

##### 4.1. Recorder Description

The iON Speed-Pro is a compact, lightweight, point-of-view high definition (HD) digital camera. The camera supports 1080p at 30 frames per second (fps) as well as lower quality recording resolutions at higher frame rates. The camera includes a super wide-

angle lens that provides a maximum of 180 degrees viewing angle and is capable of taking still images at a 14 mega pixel resolution. The camera supports recording to micro Secure Digital (SD) cards.

## **4.2. Recorder Damage**

Upon arrival at the NTSB Vehicle Recorder Division, it was evident that the camera had not sustained any heat or structural damage and the video and audio information was extracted from the micro SD card normally.

## **4.3. Video Files**

The micro SD card from the device contained six video files pertaining to the accident flight. Three of the recordings were made at a resolution of 1920 x 1080 pixels at a frame rate of 29 fps. The additional three files were lower resolution duplicates of the high-resolution files and are at a resolution of 432 x 240 pixels and 29 fps. Each set of three files are from the same event and are split into separate files due to the recording logic of the camera. The second file begins where the first ends and the third begins where the second ends.

## **4.4. Timing and Correlation**

The times used in this report are expressed as Video Elapsed Time, which is time from the beginning of the recording. The format given is MM:SS, where MM stands for the number of elapsed minutes and SS the number of elapsed seconds.

## **4.5. Summary of Recording Contents**

In agreement with the Investigator-In-Charge, a video group did not convene and a summary report was prepared.

### **4.5.1. Video Recording One**

Figure 1 is a digital illustration of the camera's field of view. The camera was mounted on the left wing of the aircraft and was looking forward over the nose of the aircraft on the left side. It captured an indication of whether the engine was running but did not capture control positions. An audio track was included with the video files.



Figure 1. A digital illustration of the field of view of the camera.

The video began as the airplane was stationary with its engine off and positioned near a hangar. At 00:28 the engine started.

At 02:15 the aircraft began to taxi. The aircraft continued to taxi until coming to the hold short line for runway 7R-25L at taxiway C11 at 05:02. The pilot performed a runup. The runup appeared unremarkable.

At 08:53 the aircraft began to move forward again and at 09:04 had crossed the hold short line for 25L. The aircraft began to accelerate forward at 09:24 and the visible propeller RPM was observed increasing. The audio track at this time also indicated the engine power was increasing and the aircraft was on take off roll.

At 09:38 the wheels left the ground and the shadow of the entire aircraft could be observed.

At 10:18 the aircraft began to roll left and returned to a wings level position at 10:30 and was on a left crosswind for runway 25L. At 10:41 the aircraft rolled left again for a left downwind for runway 25L. At 10:52 it returned to a wings level position.

At 11:44 the aircraft began to roll left onto an arching base to final leg for runway 25L. The wheels touched the ground on runway 25L at 12:40 and the aircraft took off again at 12:52. The aircraft performed a touch and go.

The aircraft proceeded to fly in a left pattern for runway 25L for another touch and go maneuver.

At 15:05 the aircraft bounced as it touched down on runway 25L again and appeared to abort the landing and went around at 15:15. The aircraft proceeded to a left pattern for 25L until it reached runway 25L again for another touch and go maneuver.

At 17:58 the aircraft bounced as it touched down on runway 25L again and appeared to abort the landing and went around at 18:08. The pilot appeared to have trouble maintaining directional control before electing to go around.

The aircraft proceeded to fly a left pattern for 25L until it reached runway 25L again for another touch and go maneuver.

At 21:01 the aircraft touched down on runway 25L again and at 21:17 took off. The landing portion was under control, however, when the pilot added power to go around, they began to lose directional control until becoming airborne again.

At 21:37 the aircraft began another left pattern for runway 25L. At 22:02 the aircraft was in a wings level position and continued to fly wings level until 22:49. The aircraft was on a downwind leg for runway 25L. As the aircraft completed the downwind leg, the airspeed appeared to decrease.

Between 22:50 and 22:57, the aircraft rolled left to enter a left base leg for runway 25L. As the aircraft rolled left, it appeared to exhibit aerodynamic buffeting.

While entering the left base leg between 22:57 and 22:58, the aircraft rolled right then immediately rolled left at 22:59 and appeared to depart controlled flight as the nose of the aircraft pitched down (estimated to be greater than 45 degrees) and started descending rapidly. At 23:00, the left roll was greater than 90 degrees.

Between 23:00 and 23:03, the aircraft rolled right until the right roll was greater than 90 degrees. The aircraft continued to descend rapidly while rolling rapidly back and forth.

At 23:04 the aircraft impacted the ground between several cars stopped at an intersection. After impact, fluid was observed on the ground and dripped from the aircraft.

During the time interval in which the shadow was observed, there were no indications that any parts separated from the aircraft. During descent to impact, the audio was consistent with the engine producing power.

At 34:15 the part of the aircraft with the camera attached was moved by response personnel who had arrived on scene.

At 50:13 the first video file ends.

#### **4.5.2. Video Recording Two and Three**

The second recording began where the first recording ended and ran for a total of 53 minutes and 11 seconds.

The third recording began where the first recording ended and ran for a total of 40 minutes and 29 seconds.

The content captured in the second and third recordings was consistent with the first recording.